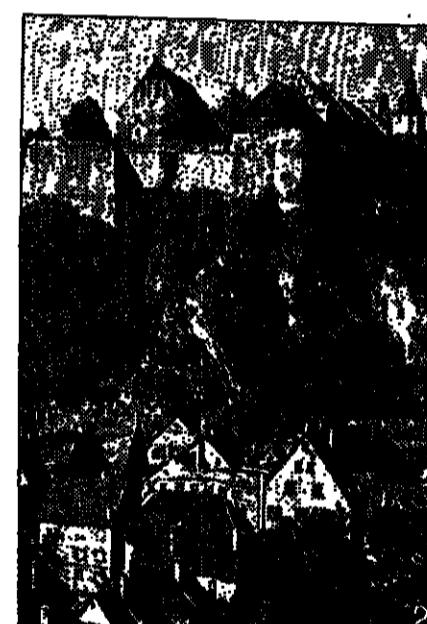
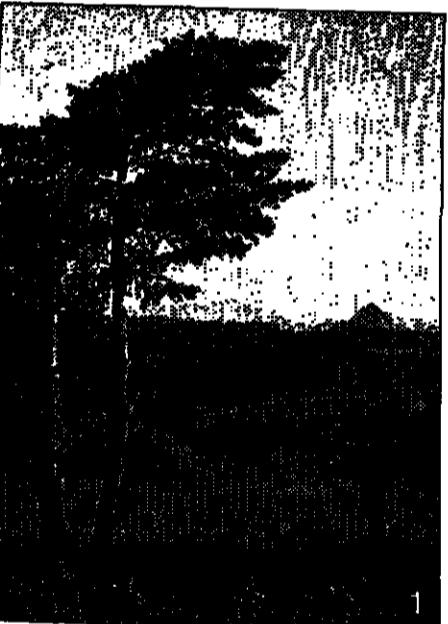


Routes to tour in Germany

The Swabian Alb Route

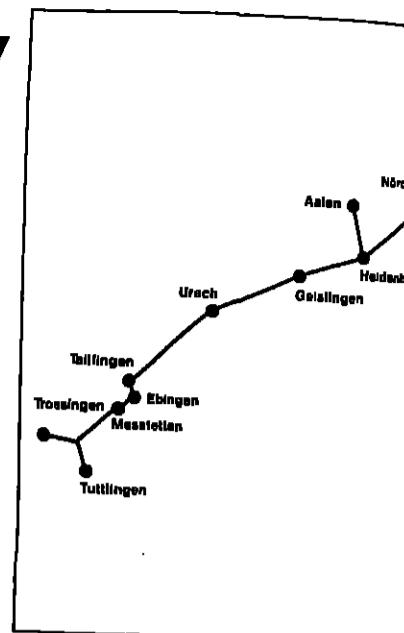
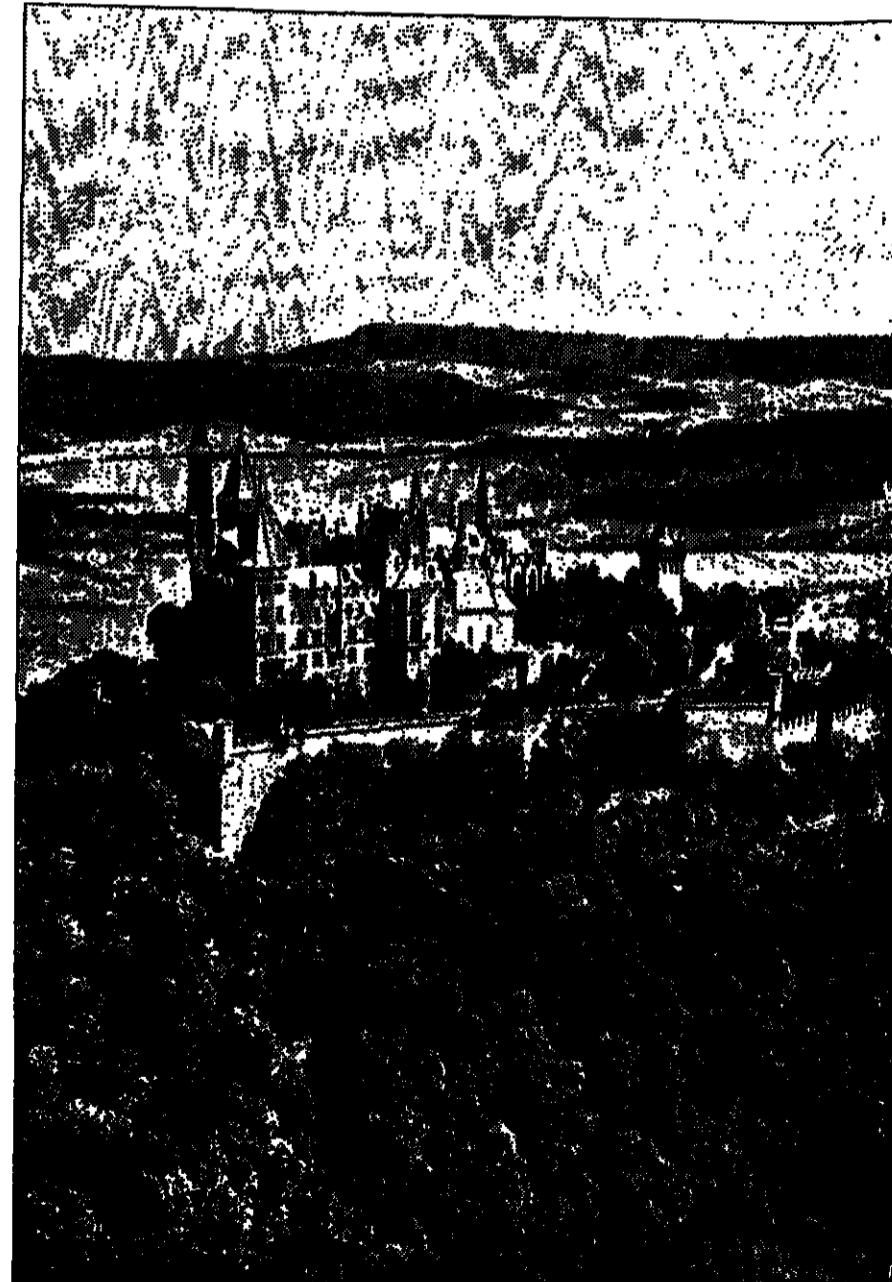
German roads will get you there. South of Stuttgart the Swabian Alb runs north-east from the Black Forest. It is a range of hills full of fossilised reminders of prehistory. It has a blustery but healthy climate, so have good walking shoes with you and scale a few heights as you try out some of the 6,250 miles of marked paths. Dense forests, caves full of stalactites and stalagmites, ruined castles and rocks that invite you to clamber will ensure variety.



You will also see what you can't see from a car: rare flowers and plants. The route runs over 125 miles through health resorts and nature reserves, passing Baroque churches, late Gothic and Rococo architecture and Hohenzollern Castle, home of the German Imperial family.

Visit Germany and let the Swabian Alb Route be your guide.

DZT DEUTSCHE ZENTRALE FÜR TOURISMUS EV
Beethovenstrasse 69, D-6000 Frankfurt/M.



- 1 View of the Hegau region, near Tübingen
- 2 Heidenheim
- 3 Nördlingen
- 4 Urach
- 5 Hohenzollern Castle



The German Tribune

Hamburg, 14 December 1986
Twenty-fifth year - No. 1255 - By air

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European Community heads keep summit tranquil

Frankfurter Rundschau

The London summit meeting of the 12 European Community heads of government will make no visible mark on either the development of the Common Market or the course of world affairs.

The summit went ahead as smoothly as the host, British Prime Minister Margaret Thatcher, had planned.

Whenever a debate seemed likely to occur on one issue or another Mrs Thatcher, in firm control from the chair, nipped it in the bud with reference to an agenda that was full to overflowing.

President Reagan's troubles in Washington and their consequences for East-West relations and the disarmament negotiations are a major worry facing the 12 heads of government and their foreign Ministers.

Most admitted it. They seem to have agreed that what now matters is to come to grips with at least some of the problems from Western Europe.

The most important issue is probably the negotiations on a reduction in non-

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For Fritz, 65, a man's cave is his castle

nuclear forces "from the Atlantic to the Urals" proposed by the Warsaw Pact states last spring

France's government constellation, with a Socialist President and a Gaullist Premier, makes it difficult for Paris to agree to disarmament talks that might prejudice the country's defence doctrine.

That in turn makes it more difficult for the 11 Nato member-countries in the European Community (all except Ireland) to agree, as they badly need to do, on a joint approach.



The 12 European Community leaders at Buckingham Palace with the Queen.
(Photo: dpa)

Nato defence ministers clear on aims

The 14 Nato Defence Ministers showed an unusual unanimity when they met in Brussels to clarify their views about the disarmament proposals at the Reykjavik summit.

The 14, representing all member countries except France and Iceland, are prepared to back disarmament moves in the nuclear and conventional sectors but not to dispense with the flexible response strategy of which the nuclear deterrent has been a mainstay for 20 years.

They also have no intention of accepting the Soviet linkage of progress on medium-range missile talks with progress in other sectors — meaning SDI.

That would indeed lead to the talks grinding to a halt, which the Soviet leader presumably doesn't want any more than the West does.

The zero option envisaged in the intermediate-range nuclear sector will not be total in the West. Nato Defence Ministers having definitely called on Britain and France to maintain their nuclear deterrents and advocated clear ceilings for short-range missiles.

This attitude must be seen against the background of the West's realisation that it cannot uphold its deterrent by conventional weapons alone — unless agreement is reached at some stage or other on conventional force reductions.

Safeguarding peace and freedom by means of Western defence strategy and the aim of war never being waged again have been stressed at several Nato spring and winter conferences.

Reiterating them can do no harm. It will remind people time and again that they owe their security mainly to the North Atlantic pact.

Helmut J. Wieland

(Rheinische Post, Düsseldorf, 6 December 1986)



(Cartoon: Horst Haizinger/Nordwest Zeitung)

■ WORLD AFFAIRS

Reykjavik shows up need for new Nato nuclear strategy

The writer of this article, Walther Stützle, is director of the Stockholm International Peace Research Institute.

SONNTAGSBLATT

Since the Reykjavik summit many members of the Atlantic alliance have felt deeply shaken.

Some fear President Reagan, short-sighted and lacking the courage and vision that distinguish statements from mere politicians, may have missed a historic opportunity of an advance towards nuclear disarmament.

Both sides have an insane number of nuclear weapons, a total of more than 50,000 warheads stockpiled.

But no one has yet come up with an answer to the difficult question of how safe a world would be had: a) scrapped its stockpiles of nuclear weapons, but b) not scrapped the knowledge to make them again when it will.

Others feel President Reagan ought never to have gone so far with his nuclear disarmament ideas, if only because of the relative numerical weakness of Western conventional forces.

Lending military policymakers such as Bonn Defence Minister Manfred Wörner and Nato's SACEUR, US General Bernard W. Rogers, have publicly spoken out in favour of the latter view.

Yet both fielded arguments against President Reagan's position in Reykjavik that cannot simply be taken as read. Quite the opposite, no-one who has followed the debate can fail to have been surprised.

The claim that a zero option for intermediate-range nuclear missiles is out of the question on account of the imbalance in short-range nuclear weapons and conventional forces is based on a threefold misconception.

First, the zero option formed part of Nato's dual-track decision from the outset. The pact's shrewd and politically experienced secretary-general, Lord Carrington, rightly — if cautiously — recalled this in an address to the Atlantic Institute in Brussels.

Second, the debate on one-sided Soviet advantages in short-range nuclear missiles must not forget that Mr Gorbachov did not insist in Reykjavik on including British and French nuclear forces in the proposed cuts.

Yet the Anglo-French deterrent more than offsets Soviet advantages in the short-range sector.

Third, nuclear weapons, regardless of their range, cannot ever offset or make up for defects in conventional defence.

Many in the Western alliance regularly assume that they can. This is to avoid the intellectual and material consequences of further reflection.

But it is an assumption that is a momentous misconception for Western defence policy.

Since the days of John F. Kennedy no US President has tired of reminding America's allies in Western Europe that nuclear weapons cannot be a substitute for inadequate conventional defence precautions.

Western Europe can hardly expect an American President to order the use of nuclear weapons and jeopardise US survival merely because Europe

The first round of the Stockholm conference on confidence-building measures and disarmament in Europe came to a successful conclusion in September.

The package of confidence-building measures agreed is to be followed by others in a second round of talks, enriched by initial agreements on conventional troop limitation and reduction.

It is not yet clear what line the West proposes to take in the negotiations. A wide range of difficult conceptual questions has yet to be answered.

Ought talks to deal with all armed forces from the Atlantic to the Urals or should they be limited to a specific area? Should they cover manpower and equipment or just one or the other? Are all conventional weapons up for discussion or just some, such as tanks, aircraft and artillery?

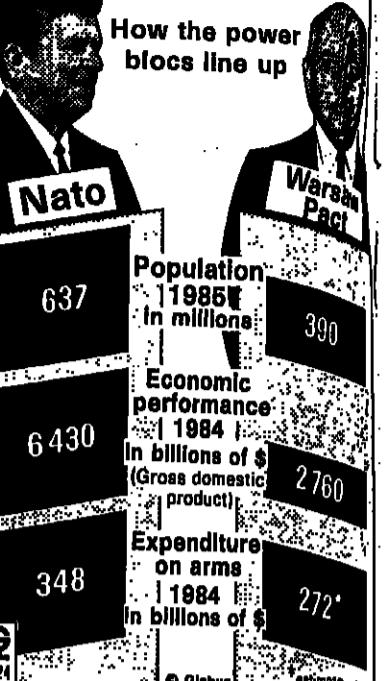
Are talks to be held between Nato and the Warsaw Pact to the exclusion of France, Spain and the neutrals and non-aligned, or should the 33 European states plus the United States and Canada continue to confer?

Whatever conclusions the Atlantic alliance may reach, it cannot avoid arriving at conclusions on two key issues: how strong does it realistically estimate Warsaw Pact conventional defence capacity to be and how strong must its own be to strike a balance?

Given the lesson to be learnt from Reykjavik it must be clear that nuclear weapons can no longer be counted as an inexpensive substitute for adequate conventional defence.

This long overdue reappraisal by

Reagan and Gorbachov



Western Europe could also make a substantial contribution toward launching an urgently needed process of reconciliation with sceptics in the West who rightly reject the threat of early use of nuclear weapons.

Unless the new strategy meets with their approval the alliance will not in long term be able to maintain its political authority.

Walther Stützle
(Deutsche Allgemeine Sonntagszeitung, Hamburg, 7 December 1986)

The ABC of a disarmament dilemma

would arguably make a crucial inroad on the West's nuclear deterrent capacity.

This particularly worries Britain, France and Germany in view of Soviet superiority in short-range (below 1,000km) nuclear missiles in conventional Warsaw Pact forces and in enormous stockpiles of chemical weapons.

Nato's Supreme Allied Commander Europe, US General Bernard W. Rogers, and his German deputy, General Hans Joachim Mack, have sounded unusually harsh public criticism of the risks posed by a zero option.

In the short term the crucial issue for Nato is how closely the United States can link an intermediate-range agreement with talks on short-range "parity" and a balance in conventional forces in Europe.

America, evidently surprised by its allies' misgivings, has repeatedly stressed this link since Reykjavik.

In the longer term, or so many Nato diplomats feel, the strategic conclusions of the Atlantic alliance must reach will be more significant.

What conclusions must Nato reach for its flexible (nuclear) response strategy from the abolition of intermediate-range nuclear forces and the possible abolition of strategic missiles? So far the answers are far from clear.

The military are worried partly by Soviet SS-21 and SS-22 missiles that have been stationed closer to the border with the West since Nato's missile deployment and partly by the latest SS-23s, with a range of 500km, deployed by the Russians since last year.

These worries are underlined by fears that total abolition of medium-range missiles in Europe might mean the end of Nato's present flexible response strategy.

This brings the debate back to the real reason for the stationing in Europe of intermediate-range US missiles capable of reaching targets in the Soviet Union:

It is that the United States is unlikely to use its intercontinental ballistic missiles against the Soviet Union in response to an attack on Europe and not on America itself.

It is unlikely to do so because Ameri-

THE EUROPEAN COMMUNITY

Nervous coughing over old Turkish-access promise

Twenty-three years ago no-one in the original six-member European Economic Community spared a thought for the Anatolian masses. In booming economies Common Market employers welcomed any extra manpower.

In the summer of 1963 Chancellor Adenauer approved a treaty of association with Turkey that came into force a year later.

A key feature of the arrangement, which was a logical consequence of the association treaty with Greece, was its guarantee that Turkish workers would enjoy total freedom to settle and work in all European Community countries from December 1986.

But just as the Community manoeuvred itself into a tricky position by guaranteeing to buy unlimited amounts of farm produce at a fixed, high price, so it has miscalculated its pledge to Turkey.

In the wake of the 1973 and 1979 oil price shocks, which more than quadrupled fuel prices, European economies took a buffering from which they have been slow to recover.

Twenty-three years ago there was a brisk demand for manpower. Not so today, and certainly not for unskilled workers, as latest unemployment figures for the 12 European Community countries clearly show.

Luxembourg statistics put the number of people out of work in the Community at roughly 15.7 million. Auto-

mation has made such headway in the past two decades that manpower requirements have been curbed despite full order books.

So the Community is now twisting and turning like an ornamental Turkish snake under the burden of its association commitment.

The Federal Republic of Germany, where 1.4 million Turkish migrant workers have already set up a second home, is particularly keen not to let in more Turks.

Fears of too much alien influence and, particularly, of Turkish competition for scarce jobs are the main arguments against unlimited access for migrants from Anatolia.

At European Commission headquarters in Brussels no-one is saying so officially, let alone officially, but on the quiet Eurocrats would have been happier if the Turkish military regime had not been replaced by a democratic system.

The Turkish government headed by Premier Turgut Özal can now fairly call on the European Community to abide by its commitment to allow Turkish citizens freedom of access to live and work in Common Market countries.

He can also insist on the Community providing financial assistance pledged but frozen during military rule.

Last not least, he can submit a Turkish application to join the European

Continued on page 6

I, like many others, was quick to recognise the outstanding merit of President Weizsäcker's Bundestag speech on May 8, 1986. In congratulating him I expressed the hope that it would receive intensive publicity.

Since then, having read and re-read the speech, I have come to feel that special efforts should be devoted to perpetuate his message.

— Arthur F. Burns, *A speech and its effect; page 60*

"A SPEECH AND ITS EFFECT"

edited by Ulrich Gill and Winfried Steffani, members of the Institute of political science, University of Hamburg, is an anthology of different opinions on President Weizsäcker's Bundestag speech on May 8, 1986.

The authors:

Imre Adam-Schweitzer, member of the German Bundestag (FDP); Egon Bahr, member of the German Bundestag (SPD); Jitzhak Ben-Ari, ambassador of the state of Israel in Germany.

Dieter Blumenwitz, professor of international law, Würzburg.

Arthur F. Burns, ambassador of the United States from 1981 till 1985.

Heribert Czepl, leading member of the refugee association.

Liselotte Funcke, Federal Commissioner for Aliens.

Alfred Grosser, political scientist, Paris.

Józef Holzer, historian and scientist, Warsaw.

Karl Ichab, president of the German association of resistance fighters.

Nevil Johnson, political scientist, Oxford, U.K.

Peter K. Kelly, leading member of the Greens.

Lev Kopelov, Russian dissident and author.

Norbert Lammert, member of the German Bundestag (CDU).

Werner Nechmann, central council of Jews in Germany.

Lorenz Niegels, member of the German Bundestag (OSU).

Roman Rose, president of the association of Sinti and Roma.

Wolfgang Seiffert, political scientist, Kiel.

Winfried Steffani, political scientist, Hamburg.

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Foreigners unemployed in Germany

Number* and percentage on the dole

Turks: 93-15.9 % Total 260-14.2%

Others 69-14.2%

Italy 38-16.0% Yugoslavia 36-11.0%

Greeks 14-11.8% Spaniards 7-9.1%

Portuguese 3-8.1%

* Figures to nearest thousand

Source: ANBA

Ankara determined to go ahead with membership application

side the Commission's Brussels headquarters.

The Turkish flag already flies outside the Palais de l'Europe in Strasbourg, where Ankara is about to take over for six months in the chair at the Council of Europe.

Premier Özal plans to use this opportunity to the full. He badly needs both domestic and foreign policy successes.

The next general election is in autumn 1988. At the end of 1983 his Motherland Party came to power with roughly 45 per cent of the votes and 211 seats in the Turkish parliament.

It was the beginning of a new era. General Evren, who had ruled the country since a military coup in September 1980, had been head of state since November 1982 when a new constitution came into force.

Mr Özal's party took a drubbing in mid-term elections last September. Previously banned Opposition parties are making a comeback. His most serious rival is the conservative Justice Party led by past Premier Süleyman Demirel.

Mr Demirel is expected to be well in the running by the next general election. Some Turks are dissatisfied with Mr Özal's programme of political and economic reforms.

He and Foreign Minister Vahid Halafoglu meanwhile untriringly reiterate their commitment to Europe, to democracy and to the observation of human rights.

In mid-September, when the joint association council met in Brussels for the first time in six years of Foreign Minister level, Mr Halafoglu stressed that Turkey was part of the Western world and wanted to become a member of the family.

Premier Özal and Foreign Minister Halafoglu have appealed to their partners in the European Community and Nato allies to step up economic and military aid.

They mainly have in mind the United States and the Federal Republic of Germany as the most powerful members of both pacts in economic terms.

Hans-Peter Ott

(Bremen Nachrichten, 24 November 1986)

■ GERMANY

East Berlin opens the gates a little

STUTTGARTER ZEITUNG

East Berlin is making it not quite so hard for people to get temporary exit visas. By the end of the year, between 200,000 and 300,000 East Germans will have visited the Federal Republic — the largest number since the Wall was built in 1961.

Exit visas are most readily granted for "urgent family" reasons. The East Berlin regime is now interpreting the words "urgent" and "family" broadly.

Roughly 20,000 people will have received permanent exit permits and between 4,000 and 5,000 young East Germans will have visited the Federal Republic by 31 December — an unusually high figure. (Old people, especially pensioners and the ill, usually find it the easiest to get exit visas).

There is mounting pressure for a more exit visas to be issued. Members of the East German peace movement are openly demanding greater overall freedom and freedom of movement.

They are not afraid to put their names and addresses on public petitions.

During the past month there have been almost daily reports of attempts to flee from East Germany.

One man was shot dead after almost getting over the Berlin Wall. This is said to be the first "wall death" caused by firearms in the 1980s and the 75th since the wall was built on 13 August, 1961.

Post-war developments within East Germany explain why the pressure for more freedom of movement is growing.

Hardly anyone recalls the case of the secondary-school pupil Hermann Joseph Flade who was sentenced to death for just printing and distributing a few leaflets in 1951. His life was spared following international protest.

A university chaplain from Leipzig by the name of Siegfried Schmutzler was sentenced to five years imprisonment because of the "illegal formation of a group" for something which is more or

Shoot to kill still the order of the day at the border

Last year 160 people fled from East Germany. By the end of October this year, 172 had already bolted, 50 alone in October.

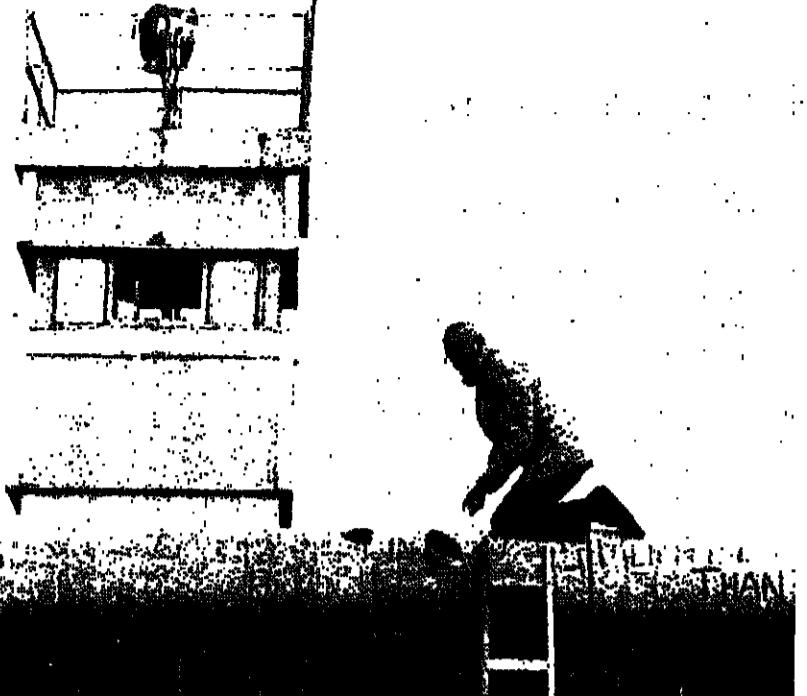
It shows that the sophisticated and expensive border barriers are not impenetrable; even though they are still extremely dangerous.

Reports at the end of November made it clear that the order given to East German guards to shoot people trying to flee has not been dropped.

One man trying to escape from one part of Germany to another in Berlin probably died during the attempt.

Why the border authorities keep on shooting to kill is still a matter of conjecture.

The large number of successful attempts to get out have probably persuaded authorities to increase deterrence.



The Wall buster: John Runnings at war with East Germany. (Photo: Jpa)

less taken for granted in every religious peace group in East Germany today: critical discussion.

Ten years ago the East Berlin state security service apparently still believed that it only needed to clamp its fist and squeeze tightly to come to terms with dissidents such as Robert Havemann and Wolf Biermann.

An authority on East Germany, Karl Fricke, explained the East German authorities pursued this policy without ever thinking that precisely these representations would produce new opposition.

Fricke is the author of a detailed report on the evolution of the East German state.

He says the transition from isolated to collective opposition can be traced back to the 1970s and is shown by individual cases.

Such as the case of a senior surgeon in a country hospital in East Germany who lost his job after applying for an exit permit, but gained widespread solidarity.

"The young and up until then unnoticed colleague who publicly expressed his deep respect for our action. The nurse who complained that her husband was not courageous enough to risk a similar move..."

Or the case of the author Sigmar Faust, for whom thirteen years ago forty-five East German citizens cited the UN Convention for the Protection of Human Rights after he was refused an exit permit.

During the 1980s there have been more frequent manifestations of protest

— the Socialist Unity Party (SED) is also far from being united.

One SED official, who was high-ranking enough to be entitled to travel to the West, referred to intense discussions within the party over freedom of speech and movement during his visit to West Berlin.

He explained how an official clampdown on such discussions often leads to resignation and in the end to an attempt to flee the country.

There are increasingly frequent reports of conscientious objection and refusals by recruits to swear the oath of allegiance to the state.

There are also growing signs that the number of flight attempts during which East German border guards failed to hit their target is by no means connected with any moderation of the order to shoot anyone trying to flee.

Each shooting incident on the border strains intra-German relations and jeopardises the regulations drawn up between the two countries.

East Berlin should also bear this in mind if it believes that it can disregard human rights.

He didn't seem to worry when he was disarmed and led away by his fellow guards.

Rudolf Grosskopf
(Deutsche Allgemeine Sonntagszeitung, Hamburg, 30 November 1986)

Otto Jörg Weis
(Stuttgarter Zeitung, 29 November 1986)

Frankfurter Rundschau, 8 December 1986

One man's fight to smash the Wall to pieces

John Runnings has a thing about international borders. The 69-year-old former joiner from Seattle says passports and borders prevent peace, freedom and justice.

The target of his latest campaign is the Berlin Wall. His inspiration came after seeing a film about it on American television. So, in May, he booked into a Berlin hotel by the Wall for 10 marks a night and went into action.

He has attacked it seven times; he has broken holes in it, climbed over it, organised a urination event against it, and dosed border defences by running through the Checkpoint Charlie crossing point. He is still alive and well enough to tell the tale.

The East German guards keep arresting him and bringing him back to the West. Now he has been warned by the American Embassy in East Berlin that the regime in the East is getting fed up with him.

But his resolve remains: to destroy the Wall in front of an international public.

His latest strike was last month. "Boys, I'm coming," said the thin, white-bearded crusader as he manoeuvred his home-made ladder against the Wall, climbed on to it and knocked a hole in it with a hammer. Usual procedure — he was arrested by the border guards.

Runnings regards himself as a Gandhi-style campaigner for peace. His first action to hit the Wall in May went virtually unnoticed — he invited everybody in the city to join him in a massive urination-against-the-Wall operation.

But he was the only one to turn up — with an umbrella in the pouring rain. He was arrested before putting his plan into action.

He has been busy ever since. Neither the East Berlin authorities nor the American Embassy in East Berlin know what to do.

Perhaps the only solution is that hinted at by Runnings himself when he said: "If they use force to bring me back to Seattle, then I won't come back. But I will continue the campaign for peace in the United States."

Birgit Loff
(Kölner Stadt-Anzeiger, Cologne, 22 November 1986)

Continued from page 1

Many border guards are known to prefer to shoot to miss or not to shoot at all. But that is risky for the guards. If they are discovered, penalties are harsh. But East Berlin is also bound to suffer if it continues this policy.

Each shooting incident on the border strains intra-German relations and jeopardises the regulations drawn up between the two countries.

East Berlin should also bear this in mind if it believes that it can disregard human rights.

He didn't seem to worry when he was disarmed and led away by his fellow guards.

Eric Hauser
(Frankfurter Rundschau, 8 December 1986)

■ ANNIVERSARIES

Berlin and its East-West role: need to get rid of smokescreen terminology

This is the second of a two-part article written by the Mayor of Berlin, Eberhard Diepgen, for the German foreign affairs periodical, *Aussenpolitik*, to mark the city's 750th anniversary next week. The first part appeared last week.



and West will have to weather new challenges. I would like to mention a few examples: Environmental pollution respects no walls or borders. Environment consciousness among the public is growing on both sides, and so is the need to take action. East and West depend on dynamic productivity. Waste removal problems and recycling opportunities are gaining in weight and could be shared by East and West. A gainful transfer of technology also promotes East-West meshing and is certain to do so more efficiently than a one-way transfer through espionage. Modern transport, tourism, comprehensive East- and long-distance communication services and ranges of the media, inclusive of their service opportunities, call for at least a European scale. Both West and East are plagued by civilisation differences and they have to deal with the problems of city planning and its social consequences. Health problems of a new kind — allergies, narcotics, AIDS — are on the rise in both West and East. Problems in connection with the fact that the *Nord* and *the World* is faced with growing demands by the South are also gaining in significance. Even in such ideology-related sectors as cultural and social processes, there are similar phenomena in East and West, among them the search for transcendence and history, the loss of the feeling of being sheltered, dropping out, nihilism, alienation and ossification.

Here, I would like to address an appeal to German domestic policy. We are much too prone to succumb to an East-West terminological hysteria. We engage in fierce disputes over terms without knowing their substance. One example out of many: the term new or second phase of detente policy. For some this is a blessing; for others it is a curse. In reality, it is either banal because every political development takes place in phases or what is meant is an entirely different policy, i.e. a bloc-transcending West-East policy of which one simply does not dare speak openly or at least intimate its ultimate objective. What I want is to see Berlin policy and *Deutschlandpolitik* shed such smokescreen terminology and generally to linguistically de-dramatise this policy and make it more pragmatic and operative. Ultimately, it is tangible interests that determine policy. These interests usually do not change or do so only in the long term, or in any event not at the rate scholarly authors invent new terminology shells. A semantic trick may sometimes be helpful in communiques, but it is mostly not conducive to the credibility of practical action.

All these issues are occupying society in both East and West. Thus there are large areas of parallel and corresponding development. This development provides many hitherto unused opportunities for an active *Ostpolitik* by the West — opportunities and indeed necessities of cooperation that would benefit both sides, all their divergencies notwithstanding. Focussing Berlin policy and *Deutschlandpolitik* on these issues engenders dynamism. Conversely, anybody who insists on virtually insoluble positions of principle makes his own policy rigid and supplies the other side with arguments against moving towards us. The constant fruitless discussions of the citizenship issue are a good example in this context.

The GDR attaches great importance to conducting its policy towards the West under the label of "peace policy". This is correct inasmuch as the opposite of a peace-oriented *Deutschlandpolitik* does not and may not exist. What is more, Berlin policy and *Deutschlandpolitik* are invariably also a contribution towards peace policy. In fact, even the Federal Republic of Germany's Constitution stipulates this in its preamble which states that the German people "are possessed of the will to serve world peace as an equal member of a united Europe". Article 5 of the Basic Treaty also contains the commitment by the Federal Republic of Germany and the GDR to "promote peaceful relations among the nations of Europe, to contribute to security and cooperation in Europe and to support efforts at disarmament. I see no difficulty in putting more emphasis than hitherto on this in our *Deutschlandpolitik*, as long as this does not give rise to any doubt as to our loyalty to the Alliance. The aim of preserving peace in Europe and in the world directly interacts with the aim of developing normal good-neighbourly relations, as the Basic Treaty calls it. Peace spreads from the bottom up. The better German-German relations are, the smaller is the conflict potential and the greater are confidence and the chance of making progress in securing East-West peace in the military and security sectors as well.

The Soviet Union is one of the signatories of the Four-Power Agreement. To this day, it collaborates with our three protective powers in the Allied Air Safety Centre. When looking out of the window of his Embassy on Unter den Linden, the Soviet ambassador to East Berlin faces the Brandenburg Gate, the Soviet cenotaph in the West, the 17th of June Street and the Reichstag building. The USSR to this day calls its troops on GDR territory the "Group of Soviet Troops in Germany". Put in a nutshell, the political presence and the political interests of the four victorious powers in Germany are particularly conspicuous in Berlin. The Soviet Union was always engaged in *Deutschlandpolitik* revolving around Berlin — and not only since the Second World War. It is well aware of Berlin's central importance for the future of Europe. After unsuccessful attempts to exert pressure on Berlin — especially through the 1948/49 blockade and the 1958 Khrushchev ultimatum — the USSR must today also be aware of Berlin's central significance for constructive East-West relations. Conversely, any politician in the Federal Republic of Germany, including Berlin (West), would be well advised never to attempt



a policy towards the East without due consideration for the Soviet Union. There is one thing that must not be forgotten: There are historically deep-rooted apprehensions in the West about excessively close German-German ties; but these apprehensions exist in the Soviet Union as well and are very much stronger there. This superpower still lacks sufficient self-assurance and confidence towards the other Warsaw Pact states. German policy must therefore constantly be explained anew in Moscow. In doing so, our task is to make it clear that it is not the intention of our Berlin policy and *Deutschlandpolitik* to call the GDR's loyalty to its alliance into question. By the same token, we do not want the Soviet Union to call our own alliance loyalty into question.

Good relations with the Soviet Union

are in the Germans' national interest. But the Federal Republic of Germany, including Berlin (West), must never permit itself to create the impression that Moscow is politically as close to us as Washington — or that we view them as equidistant. A policy of equidistance would diminish rather than increase our political weight in the Alliance and even more so vis-a-vis the Soviet Union. It could also once more make Berlin the pressure point of Soviet *Westpolitik*. Unity within the Western Alliance is the best guarantee for Berlin's security. This does not preclude differences of views and critical discussions because they are part and parcel of an alliance of free nations. The Soviet Union must always be able to rely on the fact that Berlin will provide impulses for detente, but that any pressure on Berlin will instantly lead to even greater solidarity within the West, and this can hardly be in Moscow's interest.

It is barely 100 kilometres from Berlin to the border between the GDR and Poland. Poles account for the third largest foreign population group in Berlin, and this city has always played a special role in the minds of the Polish people. I therefore want to use the opportunity provided by Berlin's 750th anniversary to stress that German-Polish relations require particular care and sensitivity, which is especially true from the vantage point of Berlin. Article 1 of the December 1970 treaty between the Federal Republic of Germany and the People's Republic of Poland states: "They (the parties to the treaty) reaffirm the inviolability of their existing borders now and in the future and mutually undertake unreservedly to respect each other's territorial integrity. They affirm that they have no territorial claims whatsoever against each other and will not raise such claims in the future". These words are binding, not only contractually but also out of deep conviction. I would welcome it if Article 3 of the treaty were inscribed with more vigour than hitherto. It reads: "They (the parties to the treaty) are agreed that an extension of their cooperation regarding economic, scientific, technical, cultural and other relations is in their mutual interest". Berlin is prepared to make a constructive contribution to that end within the framework of its rights and responsibilities. Neither side should be prevented from doing so by status quo questions under dispute.

Berlin is fully integrated in the legal, economic and social system of the Federal Republic of Germany. What matters even more is that, due to their political understanding of themselves, Berlin and the Berliners regard and may regard themselves as a full member of the superceding community that is the Federal Republic of Germany. After decades during which Berlin was mostly on the receiving end of the federation, it is now time for the city to increasingly become the giver by contributing its experience to the common effort to shape our future. What the Senate wants is to heighten the awareness in the Federal Republic of Germany of the problems and opportunities of a modern metropolitan and a modern metropolitan policy and the strength inherent in a many-faceted conurbation, especially when there are no outside resources or an adequate hinterland — in a nutshell: the idea factory Berlin. The city's 750th anniversary in 1987 is an opportunity that will not recur soon. *Deutschlandpolitik* is again a particularly important example of a greater involvement in national affairs. As explained earlier, this policy must not be directed only at West and

Continued on page 6

■ THE ECONOMY

Growth hiccup predicted — then full speed ahead

General-Anzeiger

The annual report and economic forecast of the "Five Wise Men" traditionally forms the last link in the chain of economic forecasts, so they stand the best chance of getting their forecasts right.

They have the most up-to-date economic statistics at their disposal and this year it has been most convenient that the report was not due until November.

The Council of Advisers to the Economic Affairs Ministry, to give them their official name, have had to slightly reduce the growth forecasts made earlier by their fellow-economists.

The slower rate of economic growth expected next year is already in full swing, so estimates have needed revising.

This has advantages and disadvantages. The drawback is that growth forecast for the year ahead is lower.

The benefit of this dent, as economists see it, is that it will be over sooner than expected.

The economy will regain momentum in the course of 1987 at a time when other

economists tended to expect a downturn. So what the Opposition sees as a correction of the Bonn government's growth euphoria is seen, on the basis of the same report, by the Federal government as fully bearing out its policies.

The "Five Wise Men" have indeed given Bonn full marks. Even though unemployment isn't expected to fall below two million in the year ahead the government is said to have done well on employment.

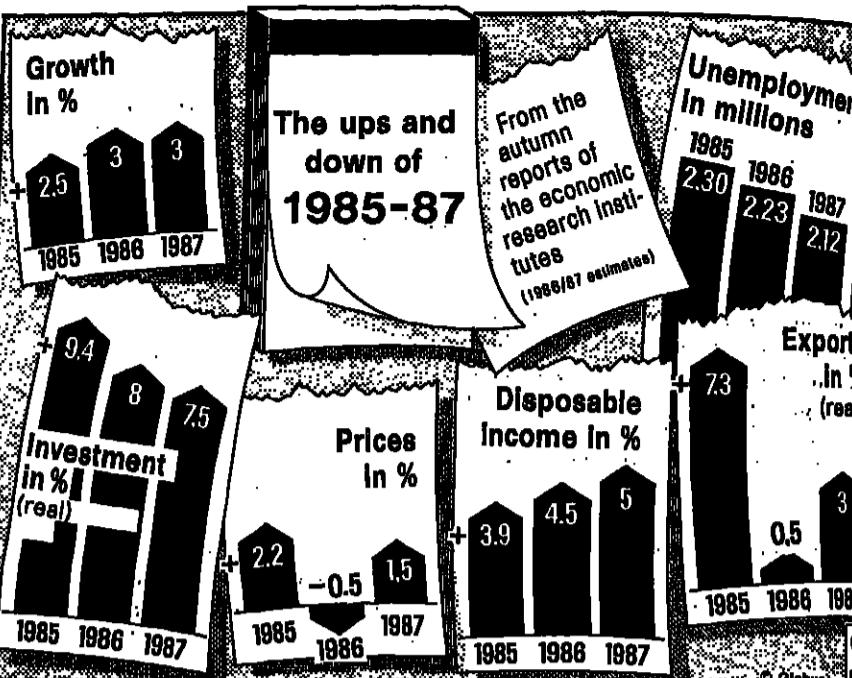
But their urgent warning must not be overlooked. A hardening of the labour market can only be alleviated by pursuing a consistently market-oriented policy, they say.

Examples they cite show market economics to be disregarded in many sectors, ranging from fixed shop opening hours to the European Community's common agricultural policy.

Not for nothing has this year's survey dealt with length, with essential reforms, some of which are rightly described as long overdue.

The "Five Wise Men" have again called for substantial tax cuts by 1990 at the latest. On this point the government is unlikely to demur.

Finances are another matter. The council of advisers strongly advise against



running up even a penny more in debts to fund tax cuts...

Finance Minister Stoltenberg has in contrast already cautiously hinted that tax cuts as planned may prove impossible without a slight increase in the public sector borrowing requirement.

The experts keep their views very much to themselves on where tax incentives need to be scrapped. They cannot go into details; that is for the politicians to do, and they say they plan to get down to business immediately after the general election.

So the scrapping of subsidies seems likely to be the most explosive financial step in the next legislative period.

There is little point in the clash between government and Opposition over whether the upswing is good or bad. The fact is the upswing has been sustained for five years and, if the forecasts are right, will continue into a sixth.

A further fact is that structural incrustation of the labour market cannot be solved solely by economic growth. The next government should draw swift conclusion from the experts' report.

The Five Wise Men have not just handed out praise; they have also allocated tasks; some long overdue.

Peter J. Velte

(General-Anzeiger, Bonn, 25 November 1986)

Continued from page 3

Community, and the Community would be obliged, by the terms of Article 237 of the Treaty of Rome, to consider a Turkish membership bid.

With the Community on the verge of bankruptcy and yet to digest the accession of Spain and Portugal last January, that would put the Twelve in a very difficult position.

It could, of course, play for time and make the membership negotiations drag on for at least seven and a half years, as it did in Spain's and Portugal's case.

The Turkish government can be sure to make the Community pay for not honouring its pledge. Keeping Turkish workers out is likely to cost member-countries billions, and Bonn will probably have to provide the lion's share.

Two years ago in Ankara Chancellor Kohl rashly promised Premier Ozal to equip a Turkish tank division, not realising the bill would be over DM1bn.

The European Commission has since sounded out the possibility of a moratorium, delaying implementation of the Community's pledge by at least 10 years.

Experts have sought to prove that Turkey, with its sociological structure and Islamic traditions, is not really a Western European country — although Kemal Ataturk made this premise the yardstick of his policy.

Community legal experts now plan all manner of stratagems to prove that the freedom of access for Turkish workers promised in the association treaty was intended to be granted gradually and not at once.

Whatever the facts may be, the European Community is in the process of jeopardising its credibility and its record in honouring treaty commitments.

It can ill afford this adventure in dealing with a country that as a Nato member and by virtue of its geographical location plays a crucial strategic role on the pact's south-eastern flank.

Helmut J. Weiland
(Saarbrücker Zeitung, 26 November 1986)

Continued from page 5

ers and interpreters. Berlin is thus in a very central sense the capital of the Germans. It can only do justice to this role in solidarity with the whole of the Federal Republic of Germany. But in its function as the capital of the German nation and its common heritage, Berlin regards itself as a giver within the federation.

Too few people have concerned themselves with this so far. The specialist lingo of *Deutschlandpolitik* is often overburdened with complicated legal terminology. This makes it appear suited and constructed. Many of our fellow-citizens regard the internal conditions in East Berlin and the GDR as crab and boring. Our knowledge about Germany (East) is inadequate. We must therefore try to arouse a sort of curiosity about the GDR. But this cannot be done by the state alone. What we lack is a *Deutschlandpolitik* deeply and broadly rooted in the social groupings. The churches have already done exemplary work in this respect. Science, schools and universities, sports, tourism, the media, art and culture are called upon to help. We must create a consciousness of the fact that life in the GDR is more intense, alert and aware than we think. In fact, there is perhaps a higher degree of awareness there than here. Often, German traditions are cultivated and receive more attention there than in the West. Among them are music in the family circle, local history, family cohesion and hospitality. German theatre and opera would be poorer without directors such as Alexander Lang and Harry Kupfer from the GDR and East Berlin.

It would be wrong to underestimate or indeed ignore the GDR. It is up to us to stress its role as a German state and to make it interesting in terms of domestic affairs and, of course, also in social policy terms — but above all with an eye to preserving the oneness of the nation. Berlin is called upon when it comes to imparting more life to *Deutschlandpolitik* in domestic affairs. We also consider ourselves the advocates of the people in East Berlin and the GDR — not in terms of intellectual tutelage or representation but as messengers

cally coincide with the borders of a state. But historians and some politicians must not be permitted to succeed in defining away the depressing problems inherent in the division of Germany as a reversion to a pluralism of states that is perfectly in keeping with German history. Of course, anybody who regards a liberal democratic system and a system of state socialism as a normal plurality of states in Germany ventures onto the thin ice of a political abstraction and displaces fundamental system-analogies from his consciousness. Even the historic German pluralism of states never knew such extremes with a simultaneous feeling of oneness as between the two German states. This is most conspicuous in Berlin. Even the Wall demonstrates this: As a power instrument of division it proves to the world at large even after 25 years that there is a yearning for togetherness. Anybody who wants to understand the German situation, the German question and the efforts to arrive at German answers can learn from Berlin. Berlin remains the capital of the Germans.

It is because Berlin (West) is firmly committed to the West and because the West is firmly committed to Berlin and because, at the same time, Berlin is firmly committed to Germany that this city has a future. Berlin as a whole will be 750 years old in 1987. There will be two anniversary programmes, but there will also be common ground between the two halves of the city. Peaceful competition in the divided city, with its two opposing social systems, underscores the differences and contrasts but, if can and will at the same time also serve the whole.

It would be good if, looking back at the 750th anniversary in 50 years, it could be said that the opportunities for unity had been made use of, despite the division, that new avenues had been explored, intellectually, politically, economically and culturally. If, together with our partners, we succeed in this in 1987, the anniversary could become a historic event.

Eberhard Diepgen

(Aussenpolitik, Hamburg, No. 4/1986)

■ INNOVATIONS

A postman who found a way to clean dirty water

DIE WELT

The secret of Piepho's success was kaolin and absorbent — and his discoveries are well protected. He has taken out more than 50 letters patent.

These were the foundations on which he was able to establish his own company in 1975, which now employs 40.

For the layman his discovery can be explained in this manner: kaolin, ground up finely or absorbent, is used to split up aqueous emulsion containing harmful waste in a chain reaction, separating the water and absorbing the harmful chemical particles into the microscopic pores and capillaries of the minerals. They are then spun into watertight cocoons.

The water remaining is so harmless that it can be pumped directly into rivers or streams, or into a purification plant to produce potable water. Many industrial firms, using the Piepho system, recycle the water for further use in their own systems.

Ralf F. Piepho, from the town of Bredenbeck am Diester, near Hanover, came up with a system for cleaning waste water heavily impregnated with chemicals, the bane of life for every chemicals plant manager. The effectiveness of his system was astonishing.

Piepho's chief chemist, Michael Kersten, saw a further possibility of economies by producing raw materials from the retrieved chemical by-products.

Using the Piepho system liquid manure, produced in considerable quantities in agricultural Lower Saxony, is turned into an odourless fertilizer powder that releases nitrates gradually into the soil. It is good for the soil and does not harm the water table.

Piepho, 47, has been very successful. His company, Piepho Abwassertechnik



Ideas poured in, water poured out. Ralf F. Piepho in front of one of his cleaning systems.

(Photo: Manfred Linke/dpa)

the basis for the foundation of his company, Piepho Abwassertechnik. Today about ten per cent of his turnover is done with the VW workshops.

News about its product percolated through the automobile industry, among workshops, petrol stations and car-washing companies. The system was just as effective with varnish and paint sealant from car spraying sheds.

Pain sludge could be neutralised so that it was no longer an environmental hazard.

In the glass industry his purification accessory contributed to economies in three ways: the costs for waste management, water used in production processes and with raw materials.

Glass particles can be separated from the cooling water used for grinding glass and the particles can be recycled in the glass-smelting process.

The purified water used for grinding, which previously had to be changed and purified once a week, could now remain in the circulation system.

But how does an ordinary postman become an industrial designer? Ralf Piepho laughed, scarcely concealing his pride in his achievements.

He was at elementary school in the "bad times" after the war. His teacher urgently advised his father to send his son to high school (Gymnasium), telling him that his son had considerable abilities.

But Piepho's father, also a postman, was more concerned with a secure job for his son, so Ralf began his career behind the counter in the post office in the Hanover suburb of Linden.

When he left the postal service in 1962 he had been able to rise to the postal building department in the Hanover headquarters, because of his considerable talents as a draughtsman.

He went to night school while working in a construction engineering office. Eventually he became a qualified draughtsman. In 1971 he went self-employed and was given work by his previous employers, the construction engineers.

His career from then on was classically American, from office boy to company president.

The first prototype unit for his purification system was built in 1974 at the Volkswagen factory in Salzgitter.

He fitted an oil trap with his system. With the technology of the time the system was constructed to purify grease from cleaning water used on engines, as well as the cooling emulsion used in drilling and grinding.

This waste water was continuously the subject of complaint by environmental protectionists.

His success earned him a three-year contract to supply his system. This was

Continued on page 9

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■ COMPUTERS

Artificial intelligence now more than just a joke

Frankfurter Allgemeine

Artificial intelligence is being studied at several German universities. This aspect of computer science is only about 30 years old and used to be a bit of a joke. Not any more.

Last year the DFG scientific research association launched an artificial intelligence research project at Kaiserslautern, Karlsruhe and Saarbrücken universities and the Fraunhofer Information and Data Processing Institute, Karlsruhe.

Computer manufacturers are also taking a closer look at it.

Artificial intelligence now even qualifies for a set of initials, KI (AI in English). AI research sets itself the task of gradually teaching a computer certain human abilities, such as understanding spoken language, proving mathematical principles, recognising certain objects and, say, making travel arrangements.

As all these examples call for intelligence there is justification in referring, in the abstract, to artificial intelligence.

The various applications share certain problem-solving procedures, such as using specific AI computer languages (Lisp or Prolog, say) for easier programming.

The use of a suitable computer language alone, of course, does not constitute AI.

Special interest is being shown in expert systems. These are programming systems capable of performing tasks previously done only by humans.

One of the first such systems was Dendral, devised in the late 1970s, which draws inferences on molecular structure from mass spectrum analysis.

Medical diagnosis is another classic sector. A system developed in the United States, Mycin, can diagnose certain bacteriological complaints with expert accuracy.

Research is in progress in Germany, where special mention must be made of the Society for Mathematics and Data Processing (GMD), of Nixdorf and Siemens and, above all, of Kaiserslautern University.

One of the products of research at Kaiserslautern is the MED2 expert sys-

tem "shell." It was originally devised for internal medicine, but its medical data base can be replaced by another that diagnoses engine performance and failure.

The mechanism that controls the conclusions reached by the computer system is the same in both cases.

Despite their fascinating possibilities expert systems still have fundamental shortcomings. Their "thought capacity" is strictly limited to their data base. They totally lack both an awareness of their limitations and general common sense.

This is one of the most serious fundamental problems AI research faces, providing critics with an ever-ready opportunity to argue that genuine AI is impossible (an argument that has triggered furious philosophical debate).

An AI application closely related to expert systems is the proving of mathematical theorems by computer using so-called deduction systems.

They are based on mathematical logic, deducing the theorem from a number of axioms.

Assuming, for instance, that the Sun is shining (axiom 1) and that it is always daytime when the Sun shines (A-leads to B), then it follows that it must be daytime (axiom B).

The difficulty with such mathematical theorems is that in practice a wide range of deductions can be reached. The problem is how to sort out the ones that will arrive at the desired result as fast as possible.

Yet substantial headway has been made in this sector. In Germany the Hamburg speech partner model has made a name for itself, the aim being to try, as a hotel manager, to provide a customer with a room.

More recent research projects aim at handling increasingly complicated situations.

One of the most efficient systems of this kind, first devised in Karlsruhe and now at Kaiserslautern, is the Markgraf Karl Refutation Procedure, named after the founder of medieval Karlsruhe.

Initially devised strictly for research use, the procedure has since been put to a range of practical uses.

Deduction systems of this kind can, for instance, be used to verify that computer circuits or programmes are fault-free.

For several years the procedure has also been reversed. Many research scientists are now probing ways of programming straight into logic. The best-known logic programming languages is Prolog — made in Europe, incidentally.

Other uses include photo evaluation and robot technology, and people often only realise when they analyse the difficulties that arise in understanding photos how complex and ingenious human vision is.

Various levels of computer vision are distinguished. First, the computer must



(Cartoon: Hanel / Frankfurter Allgemeine Zeitung)

quiring the background knowledge of "common sense."

Take the two sentences: "We bought the boys apples because they were so hungry" and "We bought the boys apples because they were so cheap."

Then it must associate them with known objects. This is done by the human eye in next to no time when we see and recognise, say, a motor-car.

Computers still take much longer. But they have a wide range of possible uses in medicine and the military sector in evaluating X-ray and aerial photos.

Today's industrial robots can hardly be said to possess intelligence of their own, but the use of various AI techniques should soon make possible machines with a limited "mind" of their own.

Classic mechanical engineering will need to face fresh tasks if it is not to forfeit its economic competitiveness, but research in Germany is still in its early days.

There are plans at the Ministry of Research and Technology in Bonn to set up a central AI research facility, partly to face this long-term economic challenge and partly to draw level with overseas competition.

All areas of artificial intelligence basically share two new features:

- First, problems for solution are represented symbolically in the computer.

- Second, knowledge is stored not just as facts but as "regulations," as it were.

The combination of the two makes computer programmes possible that can do more than they have been programmed to do. Computers are starting to "think" for themselves.

Martin Weigle
(Frankfurter Allgemeine Zeitung,
für Deutschland, 3 December 1986)

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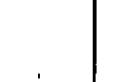
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■ RESEARCH

A volcano gives hints before it blows its top — but they must be read

Volcanoes give clear warnings before eruption. First, there are slight tremors. Then the mountain changes shape.

More gas than usual is released. Surface temperatures increase and minor steam explosions occur.

If these signs are correctly interpreted, people can be evacuated in time.

The eruption of Nevado del Ruiz in Colombia, which killed 20,000 people, was preceded by enough warning signs.

Böchum University volcanologist Hans-Ulrich Schmincke says there are false alarms. But there are also so many different signs that they need only be correctly interpreted to save lives.

There are enough examples of mass evacuation from both the real thing and because of false alarms.

On Guadeloupe in the West Indies 72,000 people were evacuated in 1976 because it was thought the Soufrière was about to erupt. Ten years later, it still hasn't erupted.

But when Mount St Helens in the United States erupted in 1980, there were only 60 deaths because the area had been quickly evacuated. Some died because they ignored the warnings.

There are 530 known active volcanoes. Eighty per cent are in so-called subduction zones where oceanic plates of the earth's crust are pushed beneath continental plates.

If ice caps also melt, as happened last year on Nevado del Ruiz, enormous quantities of water sweep down into the

General Anzeiger

This process is triggered by mid-ocean divides into which magma constantly pours, adding to the oceanic plates and pushing older sections of them toward the continents.

There they are pushed beneath the continental plates and melt at depths of 100 or 150 km. This leads to heightened volcanic activity in these zones, as shown by the chain of volcanoes round the Pacific basin.

How explosive eruptions are depends mainly on the make-up of the magma. If its silicic acid count is low, as in Mount Etna, Sicily, or Mount Kilaeua, Hawaii, the volcano generally remains benevolent.

This is because the gases contained in the molten mass find it easier to escape and do not build up a head of steam.

When the lava contains a higher silicic acid count and it is both more viscous and permeated by more gas, entire mountain peaks can blow up.

Pressure waves of hot gas and ash travelling at up to 200kph (125mph) make it impossible for people to escape.

They would be rushed to the spot whenever a volcano showed signs of activity to advise on appropriate measures to be taken in time.

Elites and space stations could help. Measuring equipment could be positioned near remote volcanoes and readings relayed by satellite for evaluation.

Satellites can measure the Earth's surface temperature directly, and it can be an early warning.

Volcanic research is still in its infancy where distinguishing between dangerous and harmless volcanoes is concerned, however. Mistakes cannot be ruled out.

Nevado del Ruiz was not included among the 80 volcanoes listed in the high risk category.

El Chichón in Mexico would not have been included either if it had not erupted in 1982 just before the list was compiled.

Yet volcanologists are still in a better position to forecast eruptions than geophysicists are to forecast earthquakes, which is virtually impossible.

Volcanoes need only a more exact interpretation of the warning signs.

Dieter Schwabold
(General-Anzeiger; Bonn, 29 November 1986)

Meteorological stations all over the world



supplied the data arranged in see-at-a-glance tables in these new reference works. They include details of air and water temperature, precipitation, humidity, sunshine, physical stress of climate, wind conditions and frequency of thunderstorms.

These figures compiled over the years are invaluable both for planning journeys to distant countries and for scientific research.

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valleys. Mixed with dust they bury entire villages under piles of hot sludge.

Such occurrences are infrequent but not unique. The worst recorded eruption was that of Tambora, in what is now Indonesia, in 1815, killing 92,000 people.

Two probes are to take a closer look at the planet and land devices on one of its moons, Phobos.

In 1994 the Russians plan to join forces with the French in sending further unmanned probes to Mars and a nearby asteroid, Vesta.

Western space experts see these plans as preliminaries for manned journeys to Mars, human endurance during the two-year flight presumably presenting more problems than the space technology.

At an international congress of cosmonauts in Innsbruck, Austria, a Soviet cosmonaut recently announced that the USSR planned to keep men in space for 10 months, as against eight, on future missions.

The origin of the planets, of their moons and of smaller celestial bodies, asteroids and comets, is one of the ma-

Bonn joins in Russian Mars probes

West German research institutes are associated with the next Soviet unmanned interplanetary mission, Mars probes planned for 1988.

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jor mysteries on which research into our solar system hopes to shed light.

The Martian moons Phobos and Deimos are felt to consist of unchanged primitive matter dating back to the origins of the solar system four and a half billion years ago.

Both are dark, irregularly-shaped objects. Phobos is 27km, Deimos 15km in diameter. Both are fairly close to the planet's surface.

Phobos is slowly heading for a collision with the planet and could crash into the surface of Mars in about 100 million years' time.

A dozen countries and Esa, the European Space Agency, are associated with the Soviet Mars probes. The German research facilities are a trio of Max Planck Institutes.

The Max Planck Nuclear Physics Institute, Heidelberg, is associated with laser gun experiments.

The Max Planck Aeronomy Institute, Lindau/Harz, is associated with tests of the Martian magnetosphere.

The Max Planck Extra-Terrestrial Physics Institute, Garching, near Munich, is associated with spectroscopy of the surface of Phobos.

(dpa)

(Der Tagesspiegel, Berlin, 22 October 1986)

Continued from page 7

building for conservation. Three 40-foot containers stand in the courtyard, to be used for a compact Piepho unit. A contract for serial production of the units has been given to a manufacturer in neighbouring Springe.

One hundred and fifty years ago Baron Adolf von Knigge wrote his book on etiquette at Bredenbeck. Ralf Piepho is also a man who knows how to conduct himself in the world.

He is used to getting things done and

■ WORDS

Poor paper, human beings, cause libraries problems

**NÜRNBERGER
Nachrichten**

Poor-quality paper and damage caused by both readers and the march of time are causing headaches for many libraries.

At Erlangen University Library, a book 140 years old nearly disintegrated when it was eventually handled after lying, unnoticed and 'badly' stored for several months.

Many pages had yellowed or turned brown and the paper was brittle.

This decay cannot be explained by age alone. Many older books are in perfect condition.

The cellulose from which they were produced, was made from animal products and cotton material such as rags and turned into a pulp, from which the paper would be produced by hand. It was chemically neutral and durable, but expensive.

The quantity of paper that can be made in this way is limited because of the basic materials required.

In 1844 paper began to be made from wood pulp, making it possible to meet the enormous demand for cheap paper in an industrialised age. But the quality was not good.

This cheap paper contains all the impurities of the original wood so that it has little permanency and will very quickly turn brown and brittle.

The more permanent product of wood is a chemical pulp. Wood without the bark is broken down into small chips. These are fed to a digester and boiled under pressure with either acid or an alkali.

This process removes everything from the wood except the pure cellulose, which is then taken from the digester, washed and bleached to the degree of whiteness required.

The problems of paper used in books was recognised early. About 1860 a method was discovered for ridding paper pulp of impurities with the aid of sulphide, producing a "wood free" paper.

"Unfortunately this was not followed through," said Dr Karl Scheltz, responsible for the care of the books in the Erlangen University Library. The old cheap method was still necessary, particularly during an economic depression in Germany, for instance, during the years of inflation in the 1920s and in the hard times after the Second World War.

Dr Scheltz added: "The East Bloc countries still produce a lot of lignous paper."

Libraries all over the world have to deal with the problem of paper fragility. The yellow-paged book that was discovered by accident in Erlangen could possibly be saved. If the contents are to be retained a photo-copying machine can bring it to rescue the work.

But if the book is a valuable tome then it has to be sent to the book restoration institute of the Bavarian State Library in Munich.

If the book had not been found by accident anything could have happened to it. Dr Scheltz said that that was fate and shrugged his shoulders.

He explained that there was no con-

trol over which section of books in the University Library was threatened by disintegration. Books made of lignous paper were stored away throughout the library.

Dr Scheltz again: "No-one knows where books are falling apart. It would be quite impossible to go through them all to protect and restore volumes in poor condition."

Taking out impurities from the paper is a very expensive process.

The librarians at the University Library know that the newspaper collection is particularly endangered. The dailies and weeklies are printed on low-quality paper.

Over the past three years the library has made enormous efforts to make the newspaper archives more durable and has experimented with new methods of storing the collection.

The newspapers had been divided into 2,400 bundles, covered with wrapping paper, tied up and stored away.

Now 1,140 volumes have been bound so that the newspapers are no longer pressed close together, difficult to get at and damaged when consulted. The German research society provided DM23,000 to do this.

Dr Scheltz does not believe that the Library's main problem is books printed on low-quality paper, however, but their bindings.

Books are sewn-bound less and less. Increasingly paste-binding processes are being used, and now not only for paperbacks.

"That is a most unfortunate development," said Dr Scheltz. "Deterioration is now built into the books. Bookbinders say that paste binding is now just as good, but that is not true."

Books are photocopied a lot at Erlangen and this damages the spine and the binding considerably. The pages, kept together by glue, come apart. It is easy to repair sewn-bound books, but damaged glue-bound books have to be cut away and re-glued.

Dr Scheltz pointed out that margins are increasingly reduced to save paper, so that there is a limit to how often paste-bound books can be re-cut and glued together again. He said that this

Continued on page 11.



Getting round the paper problem. Library worker stores microfilm.
(Photo: Süddeutscher Verlag)



A place for reflection...the new archives in Koblenz
(Photo: Günter Dohr)

Federal archives redesigned to ease access to information

A major challenge to archivists and historians is to provide a maximum of documentation with a minimum of documents.

The technology included in the new Federal Archives in Koblenz goes a long way towards achieving this ideal.

All that is now needed is a political-legal framework to control how the archives material should be used.

Interior Minister Friedrich Zimmermann hopes to get legislation governing the security and use of archives material through the Bundestag and Bundesrat during this legislative period.

Legislation protecting data is to be complemented by legislation controlling access to data, measures that will rationalise the work of the Federal Archives, Minister Zimmermann said at the opening of the new building in Koblenz.

In addition it was decided not to include air-conditioning in the archive store-rooms, but to use insulation materials in the building's construction.

The reading room is in the central section of the building, making it easy for people to work on the archives without interruption.

There are plenty of typewriters, dictating machines and facilities for the use of micro-film apparatus.

The new archives building is very impressive and goes a long way to assuaging the complaints archivists and historians have made about inadequate legislation governing archives.

The new building is functional but at the same time aesthetically satisfying.

It was designed by Professor Günter Dohr from Duisburg. In his design for the entrance hall the architectural elements such as walls, ceiling, gallery, the stairway, lighting and artificial lighting concentrate on giving the visitor the idea of changing light rather than a pictorial composition. In the planning stage, it was obvious that emphasis was being given not to artistic and architectural values but to the building's features as an archive that could be maintained economically. The accent is on preserving the documents included in the archive and providing a suitable place where people can work with low

Continued on page 11.

■ ARCHITECTURE

Cathedral plan features transatlantic contrasts instead of mediaeval glory

No other era in world history is so much a part of European culture as the Middle Ages.

Today Europe lives under a sense of threat between superpowers America and Russia. The idea of the Middle Ages breathes new life into the Old World in an impetuous, elemental way.

The fascination with Umberto Eco's medieval detective novel (and film) *The Name of the Rose*, the new enthusiasm for mysticism and mythology, the revival of interest in the occult and witchcraft, of meditation and ecstasies, are all evidence of a newly-awakened nostalgia for the sources of occidental strengths, for the West's sense of identity, for Europe's lost superiority and experience of the world.

Have the Middle Ages become the deepest manifestation of the European spirit, a new mythos of European self-assertion, self-affirmation and self-confidence?

If this is the case then the architectural competition to redesign the surroundings of Ulm Cathedral, that has been going on for a century or more, came up with an anachronistic result.

Ten architects, most of them well known, were invited, to heal a wound in the mediaeval city's centre. The winner was not an Ulm-based architect, nor even a German architect,

maintenance costs. This has been achieved by sensibly linking the three types of space required — store-rooms, workshops and a reading room — by a cross-shaped building design.

In addition it was decided not to include air-conditioning in the archive store-rooms, but to use insulation materials in the building's construction.

The reading room is in the central section of the building, making it easy for people to work on the archives without interruption.

There are plenty of typewriters, dictating machines and facilities for the use of micro-film apparatus.

The desks in the reading room are laid out so that an eye can be kept on the readers. The Koblenz Archives will centralise the work of the Federal Archives, and provide opportunities to extend their work.

For practical, legal and historic reasons only the departments that were located in Koblenz were combined together. There are still subsidiary offices in Bonn, Freiburg and Frankfurt.

Material on government, the administration, various aspects of the German Reich in the period 1918 to 1945, material covering the Allied Occupation between 1945 to 1949 and the Federal Republic since 1949 will be stored in the Koblenz Archives.

The Archives are designed for the use of the government and the general public at large, that has a right to information about events in the past and, in a way, will act as a kind of control over what the government currently does.

Jean Favier, director-general of the French national archives described archives as "the place for reflection," as a "catalyst to cope with the past and the present," protected from natural catastrophe and political folly.

The new Federal Archives should, according to Chancellor Kohl, help citizens to understand their past aided by the German Historical Museum in Berlin and the Haus der Geschichte in Bonn.

Peter Reznitzek
(Rheinische Post)
Düsseldorf, 22 November 1986

Bright light, particularly ultra-violet light, is the most dangerous for old manuscripts that were coloured with very sensitive inks.

If the humidity is kept down then micro-organisms such as fungus and insects, are kept away.

Bookworm larvae have either died out or they do not like munching away at the leaves of the books in Erlangen University Library.

Dr Scheltz said: "I have never seen one during my whole career."

Gertraud Pickel
(Nürtinger Nachrichten, 1 December 1986)

eval cathedral down to earth, as it were, and back into the city. Meier claims to have conceived his idea for a rotunda looking down from the cathedral's observation platform. This is a dramatically different standpoint from previous competitions.

In the past architects have been at pains to concentrate on drawing up lines of perspective of the cathedral. The other buildings are planned to harmonise with this and where possible increase its effect.

But in the new designs hardly a single perspective of this kind is included.

The prize jury has not taken notice of this nor tried to balance this deficiency with a particularly intense investigation of the relationships of the sight lines.

Meier's rotunda, just like his proposals for the bank buildings nearby, cuts off the perspective horizontally, a tendency that was previously avoided. The disadvantages of this can be studied in the rotunda in the new Schirn Museum in front of Frankfurt Cathedral.

Cologne architect Gottfried Böhm took second place in the competition. He was the only one to conceive a compact mediaeval design. The tall, hipped roofs of his design would be particularly suited to the structure of the cathedral square and absorb the accents of the other old building, if Böhm had not only made concessions to modern building materials such as glass and concrete, but proposed a clumsy design, to some extent fashionable in its details.

Böhm's design rivalled an idea that was first introduced by Hans Scharoun in 1924-1925. It was oddly in direct contrast to the buildings there already, and could be interpreted as a polemic against the cathedral.

Too late the city fathers noted that the cathedral now looked like "an Easter hare made of cardboard." But the good citizens of Ulm blocked every attempt to rectify the situation.

Only now, after the third architects' competition this century, does the citizenry seem inclined to bring the media-



Before and (probable) after: Ulm Cathedral (left) with model of prize-winning design.
(Photos: Krug-Bild, Freigabe Karlsruhe Nr. 0/9775 / Simon Reso)

igrees of the cathedral facade with their even curves. The facade does not have a rosette.

Scharoun later built the Philharmonic in Berlin. His idea in Ulm was conceived as an antithesis, as it were, to mediaeval bliss. Scharoun's streamlined entry design seemed to leave the mediaeval city, including the cathedral, out on a limb.

Apart from Meier no less than three other competitors in the latest competition took up the rotunda idea.

Meier has already built an impressive museum in Frankfurt that has been acclaimed internationally. He is now one of America's star architects, and will certainly give the people of Ulm an inspiring building. Whether it is the right building in the right place will be argued for a long time to come.

Typically he will bathe his rotunda in white — an exotic, incorporeal colour for a cathedral square, that will make the building look like a bathroom.

The flat roofs of the adjoining "cubes" and of the bank buildings in front of the gabled facades of the square will increase the unfamiliar impression and together with the building gaps to the south, of which there are far too many, the whole will sober down the view of the cathedral's frontage where unfortunately, from an architectural point of view, there are new streets.

The Baden-Württemberg state curators' judgment: "A super-modern design, very independent, that will reduce the space in scale anyway." But it is anything but an apotheosis of the Middle Ages, rather a building of transatlantic contrasts.

Drama can develop from this tension, but not a sense of community, spiritualisation or mystical union.

Alternative designs have been put on display in the lobby of the Ulm city museum. This is the old friary, dismantled more than 100 years ago. But the skeleton of the main building is still there, enormous in size, and the towering gables of its chapel.

It is the boldest and the most fitting alternative. The pity is it did not compete.

Dankwart Gutsch

(Die Welt, Bonn, 25 November 1986)

EDUCATION

Early help for talented children is essential, meeting told

Intellectually gifted children tend to fade if they do not maintain contact with equally bright children, according to a Dutch study.

Professor Mönks, of the Catholic University of Nijmegen, said tests on Dutch children showed that early promotion of the gifted was essential.

He was speaking in a debate at the Bonn Science Centre held with the aim of providing ideas for Bonn Education Minister Dorothy Wilms.

It was held by a pep group consisting of psychologists and educationalists, representatives of bodies promoting gifted students and of spokesmen for industry.

Views differed on definitions. Most speakers felt the idea of "gifted students" was artificial.

Conventional IQ tests only partly accounted for the levels achieved by the gifted. They were in any case first devised in France to help the educational sub-normal.

Other factors such as creativity or outstanding ability to solve problems evidently do not depend solely on IQ.

Yet these qualities are, for instance, what chambers of commerce and industry want far more than mere proficiency in reading, writing and arithmetic.

Munich psychologist Professor Weinert's report was, he felt, the hesitant but, in the final analysis, definite approval of different categories of school after primary school but not at primary level itself.

In Holland, where children now start school at four and attend comprehensive school until they are 13, attempts have been made to identify gifted children even among the four-year-olds.

Professor Mönks favoured promoting gifted students from the earliest age, arguing that nothing was less fair than equal treatment of the unequal.

A crucial factor in the development of talent was the environment, including school, family and peers — defined as others' "equal in development."

Talent tended to fade when a gifted child lacked contact with its peers, as tests of Dutch 4-to 12-year-olds and 12-to 14-year-olds had shown.

Professor Weinert called for supply-

There should be more university exchange schemes in Europe and students under such schemes should not have to pay fees, says Bonn Education Minister Dorothy Wilms.

Speaking at a ceremony to mark the tenth anniversary of the European University Institute in Florence, Italy, she said there should also be more exchanges of junior academic staff.

Frau Wilms favoured transforming bilateral into multilateral partnership arrangements.

University partnerships should include student and academic staff exchange schemes, the development of joint study programmes and courses and, to a greater extent than in the past, joint research projects.

Fees should be abolished for European students and national authorities ought not, she said, to be so anxious in the debate on equality of university qualifications.

University exchange and academic cooperation in Europe must lay the groundwork for the younger generation to see themselves in more European terms.

From 1988 extra funds were to be made available in special research sectors at German universities to host young European specialists.

As current chairman of the institute's governing body Frau Wilms said that after initial problems in its pioneering days it had gained a fine and growing academic reputation.

She thanked the Italian government for having provided so generously the capital outlay needed to launch the institute.

Niessinger Allgemeine

side promotion of gifted students rather than systematic promotion within the selective framework of the educational system.

Yet no specific mention was made of the wide and ambitious range of supply-side opportunities that were to come the gifted student's way, as Professor Mönks of the Catholic University of Nijmegen complained.

A contradictory feature in Professor Weinert's report was, he felt, the hesitant but, in the final analysis, definite approval of different categories of school after primary school but not at primary level itself.

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Professor Weinert called for supply-

gifted students with outstanding scholastic achievements and a further three per cent of gifted students who totally lacked stimulus and suffered from serious psycho-social problems.

This second group consisted, Professor Mönks said, of "blocked talents."

These findings are not in themselves anything new. Back in the 1920s a Californian, Terman, found intelligence as such not to be crucial.

It must be accompanied by personality traits such as self-assurance and stamina, strength of character, a favourable school background and teachers who motivate the student to learn.

Terman was the 12th of 14 children and felt lucky to have attended a single-class country school with fine teachers who allowed him to work, irrespective of age, alongside pupils who had reached the same level.

Professor Mönks mentioned the German intelligence specialist William Stern, who arrived at the same findings as Terman in 1916, even earlier.

Talent, Stern said, was always only potential achievement, not the achievement itself. Keen interest and strong will-power were needed if it was to develop.

So Stern called, 70 years ago, for special educational facilities for primary school children for the age of six.

Immense efforts were undertaken, he complained, to diagnose the mental condition of society's problem cases, but not of its young hopefuls.

Professor Weinert was accused in the debate of too categorically rejecting "systematic orientation" such as special

streams for gifted students as existed in East Bloc countries.

His counter-argument was that gifted students might not emerge or be identified as such until later stages, so pupils suitable for special streaming might be missed out.

A spokesman for industry complained that technological skills which were cornerstone of all industrial innovation were not encouraged at all at school. Like sports promotion, they had to be encouraged on the basis of private initiative.

Unlike sports promotion, for which there was a pool of industrial donor, not enough was done to encourage technically gifted students.

Another speaker said it was surely worth noting that in other countries, such as Japan, no attention was paid to intellectual ability, the emphasis being strictly on comprehensive learning.

Students at Japanese comprehensive schools sat very tough exams in at least five subjects and had to pass to qualify for the next stage of schooling.

The exams tested their general education and were also tests of their memory, tenacity, interest and motivation, all of which were qualities also expected of gifted students. Were they perhaps the best way to filter out the gifted? Professor Weinert agreed that even the capable thinker could not manage without expert knowledge.

Another speaker also felt that the valuable achievement at school and in the various competitions held by the organisation that sponsored the Bonn gathering was the most useful guide in practice.

Parents of gifted children who attended the debate, if any did, will have been left feeling somewhat helpless.

Yet no mention whatever was made of gifted students of music, sport or handicrafts, whose problems were also due to be discussed.

Brigitte Mohr

(Frankfurter Allgemeine Zeitung für Deutschland, 28 November 1986)

awarded first- and second-year grants by their countries of origin, with substantial differences being offset from funds of the institute's own.

The institute also awards third-year scholarships.

Young PhDs or established scholars may apply for 12-month Jean Monnet research scholarships. At present 30 Monnet scholars are working at the institute.

Professor Maihofer is particularly proud of the European Policy Unit, set up in 1984 and already widely acknowledged for its political consultancy work.

The DM24m annual budget is met largely by Britain, France, the Federal Republic of Germany and Italy, each providing just over 21 per cent.

Smaller European Community countries contribute accordingly. Funds are also supplied directly from the European Community budget.

The institute is housed in Badia Fiesolana, a Renaissance monastery near Florence. Two nearby villas were made available and fitted out by the Italian government.

Sixty-eight PhDs have been awarded. Initial difficulties in ensuring recognition of degrees in European Community member-countries have been eliminated. New PhD regulations have been approved.

Some students prefer to write their theses mainly in Florence but to submit them in their countries of origin.

Systematically encouraged multilingualism has proved a tremendous advantage. The accepted practice is to write theses in another language and not in one's own.

The institute publishes an annual brochure outlining application requirements, procedures and grant facilities.

Students once admitted are usually

HEALTH

Clinic tries to halt vicious circle of parent-to-child alcoholism

A Caritas clinic for alcoholics in Hennef, near Bonn, is the first in Germany which accommodates pre-school children of alcoholic mothers.

Children whose parents are alcoholics run a risk of becoming alcoholics themselves one day.

Many are maltreated when their mothers or fathers are drunk and spoiled when they are sober and feel guilty.

Others are simply neglected. Clinic director Rita Feldmann-Vogel recalls one mother who spent all day in bed and was unable to look after her home or her child.

"Our patients have not only swallowed alcohol for years," she says. "They have also swallowed their problems."

The consequences can be catastrophic. Children lose confidence and orientation and are unable to fit into social groups.

Even infants can show signs of serious behavioural disturbance and are usually underdeveloped for their age.

Older children lose their sense of self-esteem and are tempted at an early age to resort to habit-forming drugs of their own.

Frau Feldmann-Vogel says over half her female patients come from homes where either their mother or their father was an alcoholic.

Studies in the United States and the Federal Republic bear out this finding. The Zissendorf Clinic in Hennef tries to break this vicious circle.

It does so as an experiment financed by the health insurance scheme for white-collar workers, which meets the cost of a kindergarten and a kindergarten teacher. Mother and child share a room.

The aim of the experiment is to clarify and stabilise relations between mother and child.

dpa

(Kölner Stadt-Anzeiger, Cologne, 22 November 1986)

Quick'n nasty

Fast foods and ready-to-eat meals like so-called TV dinners contain a wide range of additives that can trigger allergic responses, says a report.

Mönchengladbach medical training course run by the League of Allergy and Asthma Sufferers was told that fast food frequently caused itches and colds.

The additives that were to blame ought to be specified.

dpa

(Kölner Stadt-Anzeiger, Cologne, 22 November 1986)

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Thirty per cent start drinking again within a year of treatment. Fifty per cent are still teetotal after four years, 50 per cent aren't.

Many patients return to living conditions in which violence is a customary means of argument and deeply disturbed relationships drive them back to drink.

"After-care, especially after mother-and-child treatment, is indispensable," Frau Feldmann-Vogel says. "We don't discharge women unless they are taken over by groups such as the good temples back home."

"Few can be sent back to the care and protection of an intact family or career."

Sigrid Latka-Jöhring

(Kieler Nachrichten, 22 November 1986)

Plans to issue X-ray passes

An X-ray pass launched by Bonn Labour Minister Norbert Blüm is intended to record and help reduce medical radiation levels to which patients are exposed.

Some mothers only agree to undergo the six-month course of treatment because of the opportunity of bringing their children with them.

One patient is a woman of 30 who is staying in Hennef with her four-year-old illegitimate son Peter. She has another son aged 12 and says relations with her husband are petrified.

She was urged by her parents to marry him and had sought to escape growing isolation from her husband by increasing her alcohol consumption.

"Peter," the therapist writes in his case report, "constantly wants to be a baby again. He lies in his mother's lap and talks baby talk. He is also a heavy bed-wetter."

Many women first take on their roles as mothers at the Bonn clinic. Not all last the distance. Between one in five and one in three drop out.

Father's role in the family is under-estimated, says report

The implication is that separation itself is less traumatic than the parental clashes that precede it.

Sons were found to have suffered so much from the absence of their fathers that their normal healthy mental development was affected.

Daughters in contrast were "much more robust" and generally less dependent on paternal relationships.

But the father's mere physical presence is not enough to ensure healthy mental development. Psychopathological symptoms were found to be well above average in families where the father neglected his share of bringing up the children or was himself behaviourally disturbed.

Fatherless children were found to be shy, sad, depressive and tending to seal themselves off from others.

Others showed even more marked characteristics, such as a tendency to lie, steal, play truant, run away from home, wet their beds or eat too much or too little.

Parental divorce or separation was the most frequent cause of "father loss." Very few children or families investigated had lost fathers through death.

Children whose fathers had died tended to come to terms more satisfactorily with the loss and showed no more frequent signs of mental problems than children from intact families.

Loss of the father seemed mainly to affect the sons' mental health, while daughters suffered correspondingly from the loss of their mother.

The long-term effects of parental loss must not be overruled, however, as many other factors and experiences contribute substantially toward mental illness.

(Stuttgarter Zeitung, 24 November 1986)

■ HORIZONS

For Fritz, 65, a man's cave is his castle

Süddeutsche Zeitung

It is cold and dark. In summer the temperature hovers just a tick above and below zero. Dark. If the wheel on the old, cylindrical lamp is turned to the left so water stops falling on the brown lumps of carbide, the small white flame would slowly die out and leave, blackness.

There is nothing like this blackness. Alexander von Posselet wrote about it in 1879 after becoming the first person to enter the depths of this huge hole in the eastern flanks of the Untersberg, a peak in the Bavarian Alps near Berchtesgaden.

He described how, when he came to the end of the rope on which he was hanging, he lowered his lamp on a length of tape measure. The lamp caught on a piece of rock, and when he tried to work it free, the tape broke and the lamp clattered into the depths below.

"I crouched on the icy slope. I never knew how black darkness could be."

This darkness holds no terrors for potholer Fritz Eigert, 65. He has virtually been living with it for 30 years as tourist guide employed by the Potholers Club at Markt Schellenberg, between Berchtesgaden and Salzburg.

During the war, Eigert, who was born in Silesia which is today part of Poland, spent a winter inside the arctic circle in northern Finland with an artillery unit.

In winter the sun does not come up over the horizon for three months. It drove some men mad, but Eigert was sorry when they had to pull out.

Before the war, he worked in his father's cabinet-makers' workshop. After the war, after returning from two years as a prisoner of war of the Russians, he went to Regensburg where he passed his master-tradesman papers.

But the mountains beckoned, so he set off in early summer of 1954, and looked for work. He reached the small market town of Schellenberg, near the Austrian border.

When work colleagues told him about the world deep under the Untersberg, he joined the local potholers' club and went up the mountain for his first look.

The cave appears as a black abyss in the almost sheer side of the mountain. From below, the mouth is not visible because it is blocked off by an icy wall several metres high. From above, the reflection makes it look like a lake, but it is in fact the 30-metre thick layer of smooth ice that runs down into the mouth.

For millions of years rainwater in the summer and melting snow in autumn and winter has run through into the interior and mixed with carbonic acid and humic acid to form an aggressive solution which eats into the soft chalk walls and roof, creating more and more cave space.

At some time, either the weight of rock or perhaps an earth tremor, caused the cave to collapse. Great caverns, fissures and shafts opened up. One such shaft found its way upwards to the side of the mountain where it formed the mouth. It is still there today.

Cold air poured in and could not es-

cape. When 3,000 years ago, the climate became worse and temperatures sank, the infiltrating water froze and, over the centuries, grew to a huge mass until coats of ice metres thick covered the walls and domes, columns and protruberances of ice formed.

Draughts of air kept the surface of the ice evaporating which, in turn, helped keep the shafts and caverns from blocking up.

Fritz Eigert has stayed with the cave since he found it. In 1957 he became a guide and began taking tourists up to see it. After 30 years, he has probably taken up more than 300,000 — about 20,000 trips with parties of, on average, 15 people. He takes them down through the mouth, past three ice traps and into the 55 metre cavern known as the Fugger-Halle.

He works 1,000 hours a year to keep the access ways clear for visitors in addition to guiding. This means he has spent a total of about 45,000 hours at the site — more than five years of his life.

"A love of mathematics and an inventive streak have helped him. He is a cabinetmaker turned land surveyor. He has painstakingly surveyed the interior using a theodolite, a plumb-line and a compass all mounted on a sawn-off spirit-level.

He has created a gimbal-like suspension system so that a torch can be held vertical no matter at what angle its descent so that from any point on the ground a beam of light can be thrown vertically upwards to the roof.

How does the draught get in? Why is it warmer in the deepest chamber although hot air rises and cold air sinks?

Why does the stratification of ice begin horizontally and then proceed back and forward, across other strata? Why do birds which feel death approaching come here to find an ice-free place to die, the so-called jackdaw graveyard, where countless bird skeletons litter the floor?

After the tourists go away, work goes on. The wooden access steps are repaired or replaced. Fritz has his hands full up until shortly before Christmas.

He spends Christmas down in the valley, but in January goes back up again. Even snow metres deep can't stop him. In summer, the ascent takes two hours.

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More than just potting about in a hole, much more. Fritz Eigert and his cave.

(Photo: Holzhaider)

know every piece of rock, every ledge and irregularity in the ice formation. He is the king here. Sometimes when the melting snow water leaves ruddy traces on the walls, he tells tourists it is the beard of Kaiser Friedrich Barbarossa who, according to legend, sleeps in the Untersberg.

The cave governs the rhythm of his life. After Easter, he goes up the mountain and stays up there in a little hut near the cave mouth until the middle of December.

Before the tourist season, from May to the end of October, the ice which over the winter covers the wooden steps leading up to the mouth must be hacked away.

During the season, it's tourists during the day and nights alone in the hall, doing the accounts, eating, reading and reflecting on the cave.

He has assiduously built up a profile of the chamber inside the mouth, which is 70 metres by 40 metres, using these tools and trigonometric principles — position of torch, position of point of light on the roof, and a third point.

He has surveyed the labyrinth to which the entry chamber gives access, a difficult-to-reach maze of shafts, caverns and small, connecting ducts made out of limestone. One of these small ducts ends in a 45-degree tunnel that leads up towards the surface only to be blocked by interlocking boulders.

Anyone going further runs the risk of being imprisoned by a boulder crashing down behind and blocking the retreat.

Over the years, Fritz Eigert has got to

It has taken him 30 hours in winter, and that with 30 kilos on his back.

Once he had to dig through two and a half metres of snow to reach the top of his alpine hut chimney.

What drives him on? It's difficult to find out. It is true that the Potholers' Club pays him even in winter when the cave is inaccessible. The hours he works the rest of the year are enough a whole year. But that is not the way he thinks. It has nothing to do with money.

The cave has influenced his entire character. It has affected the way he walks, with small, cautious steps; it has affected the way he looks at things, vigilantly, with an developed eye for subtle changes in rock and ice forms.

No, it is a question of involvement. Work with the cave was his idea of what meant something. He gave up his sawmill job in the valley to do it.

He doesn't become easily excited. But once during our long talk, he slammed the table with the flat of his hand: how is it? he asked, that there are people who drop their tools at the sound of the five o'clock hooter? people who work purely for money and not to achieve something?

He doesn't see his job as being limited by either time or location: it doesn't end at the pothole mouth. Otherwise he would not one day have carted back to his tiny, nine-square-metre quarters a badly injured chamois and fed it mouth-to-mouth with hard bread which he first chewed up himself.

For 30 years, Fritz has never been off duty, except for a few weeks every February and March, a time which he looks upon as holiday.

He regards reliability as the most important virtue. Anyone who is unreliable is in his bad books for ever.

When Franz Josef Strauss was Bonn Minister of Finance in the 1960s, he came to the Untersberg but, because of lack of time, was unable to visit the cave. Fritz could understand that. But he can't forget that Strauss promised to come again, and hasn't. Fritz has always voted CSU, Strauss' party.

When this month, Fritz Eigert makes the descent to the valley, it will probably be for the last time. His successor has already been appointed. He was discovered through an advertisement in the potholers' newspaper, *Zeltbuch für Höhlenkunde*.

And he fulfills the requirements for the job single, because tiny quarters aren't big enough for two; not taller than 5ft 7in, because the bed is only 5ft 8in durable and resourceful.

The last qualities are essential be-

Continued on page 15

■ FRONTIERS

Under the old oak tree with Sgt Köster's recce platoon

Süddeutsche Zeitung

in the Defence Ministry, explained: "Reconnaissance troops as such do not have a combat mission. In action they avoid the enemy, but they are not on a sabotage mission either. They are reconnaissance troops, not commandos."

In an era of electronic sensors, infrared reconnaissance and satellite links four-man squads of this kind create a strange impression at first sight. But an officer involved in major manoeuvres claimed that three-quarters of all battle information is provided by reconnaissance troops, despite all the technology.

There is no alternative to reconnaissance men when the weather disturbs electronic equipment and the enemy, using their own electronic equipment, can jam communications.

Staff officer Belde said: "There are no sensors on earth that can replace the ear, eye and brain of man."

Reconnaissance troops have the task of getting to places where they can observe columns of tanks, helicopter traffic or missile transport movements — behind the enemy's lines, 20 or 30 kilometres behind the front.

A shape creeps through the thinned-out undergrowth, gets under cover again on the edge of the forest and turns his head as if he has got wind of something.

One of the possible ways to get to such a position is by air, and only men who are cautious and prudent are suited to the job.

Even in good weather it is not everyone's cup of tea to go up 3,500 metres in a helicopter. It is windy even in good weather and the helicopter vibrates a lot.

Into the bargain Sergeant-major Klaus Rosenkranz pulls open the exit panel and that no joke at temperatures of below 20 degrees centigrade three and a half kilometres up in the sky.

They can see in the dark by means of night-vision apparatus strapped across the face with protruding eye-pieces. The parts of the face that can be seen are camouflaged dark green.

They are in fact very much of this earth and carry automatic weapons, clearly indicating that they are stalking through the forest for non-peaceful purposes.

After a few seconds they pull the ripcord of their parachutes and slip in wide spirals through the sky.

The sergeant-major does not have time to think about things of this sort, for in a few minutes, with a grin, he has jumped into the cold air, followed by his three comrades.

After a few seconds they pull the ripcord of their parachutes and slip in wide spirals through the sky.

The parachutists seem to be motionless in the air because of the strong wind. Only after nearly 30 minutes do they land at a spot about 20 kilometres away as the crow flies from the position where they jumped out of the helicopter.

Reconnaissance troops carry all their equipment, including the night-vision apparatus with the protruding eye-piece, a groundsheet, and a poncho cape. They wear rubberised clothing against the wet.

In action the jump would be made at night and the recce soldier would be carrying more than a hundredweight of equipment.

Men of the reconnaissance unit have to carry everything they need on their backs.

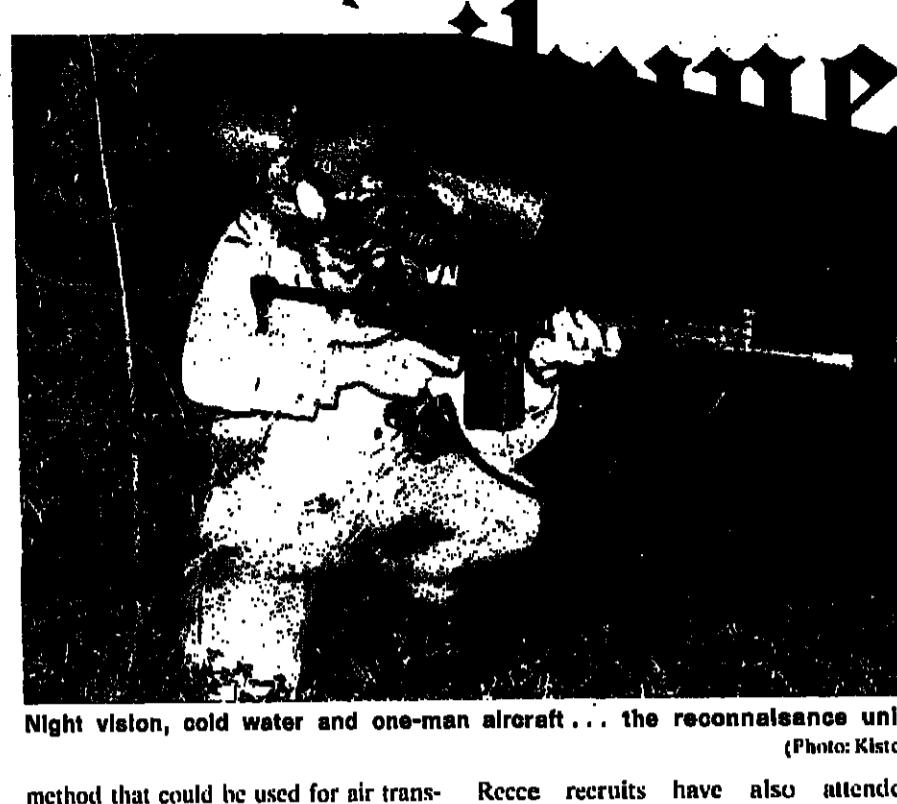
There is considerable discussion in the Defence Ministry about the most suitable

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cause, as Fritz explains, "you have to be able to help yourself in any given situation. You have to be able to work a seven-day week, between nine and 10 hours a day. And in winter you have to be able to cope on your own."

He has never complained about too much work or too little company. He does not have the feeling that he has missed anything over all these years: "I have lived my life in my style. I haven't missed anything."

Colonel Hans-Joachim Belde, responsible for this special reconnaissance unit



Night vision, cold water and one-man aircraft... the reconnaissance unit.

(Photo: Kister)

Reconnaissance units have also attended courses on arms and the tactics of Warsaw Pact troops.

They are given IQ tests because a lot is expected from them under extreme conditions. One officer said that recce troops were crème de la crème personnel.

Captain Seja believes that healthy self-confidence is also important. He said: "I don't want men who barge into the canteen and boast about the number of jumps they have made. I want men who are dead certain that when they go out on a mission they will come back from it."

Colonel Belde described this as essential "mental conditioning." This includes being able to put up with three other men for days or weeks on end in a confined situation.

In action reconnaissance troops usually live in a well-camouflaged bunker that they rarely leave for fear of being discovered.

The four-man hole, dug in the course of one evening, serves as a radio station, sleeping space, kitchen and toilet.

From such a position recce personnel report back what goes over the bridge they are watching or a cross roads they have under observation.

Each man has 60 kilograms of rations in his pack that can keep him going for two weeks in the dug-out, before he makes the hazardous trip back to his own lines.

"Mental conditioning" is increased in peace time through exercises and training with other foreign elite units.

The international reconnaissance training school is in Weingarten. It has two training sectors.

West German reconnaissance recruits are drilled in the German sector, where further training is also provided.

In the international sector reconnaissance troops from the various Nato countries train together.

Mainly because of this foreign participation the reconnaissance school is not open to the public and there is no literature dealing with its activities.

In the 100th Reconnaissance Company there are badges that Fritz Eigert means have been exchanged with many British SAS units and Dutch and Belgian elite units.

The self-confidence the recce servicemen is put to the test sometimes; they jump through the bar window, mainly early in the morning and without a chute. The bar is in the uppermost storey of the company offices building.

Kurt Kister
(Süddeutsche Zeitung, Munich, 25 November 1986)